

## CLAIMS

### What Is Claimed Is:

- 1 1. A rack comprising:  
2 a rack frame to house one or more electrical devices;  
3 an interface column coupled to the rack frame, the interface column including  
4 one or more interfaces for electrically coupling to one or more electrical devices  
5 housed in the rack frame,  
6 an electrically conductive bus coupled to the one or more interfaces to reduce the  
7 number of separate cables running along the rear portion of the rack frame
- 1 2. The rack of claim 1 further comprising:  
2 an interface module coupled to an interface in the interface column, the interface module  
3 to uniquely identify an interface and provide access to electrical devices coupled thereto.
- 1 3. The rack of claim 2 wherein the interface module is hot-swappable to permit adding or  
2 removing electrical devices without the need to power off other components in the rack.
- 1 4. The rack of claim 1 wherein the interface column extends vertically along a rear portion  
2 rack frame.
- 1 5. The rack of claim 1 wherein the number of interfaces in the interface column may be  
2 added as they are needed.
- 1 6. The rack of claim 1 further comprising:  
2 one or more backplane modules in the interface column, the backplane modules including  
3 one or more of the interfaces for electrically coupling to one or more electrical devices housed in  
4 the rack frame.

- 1 7. The rack of claim 1 further comprising:  
2 a midplane module coupled to the electrically conductive bus in the interface column for  
3 concentrating access to the devices coupled to the interface column.
- 1 8. The rack of claim 7 further comprising:  
2 a control module communicatively coupled to the midplane module, the control module  
3 configured to communicate with the one or more electrical devices housed in the rack frame.
- 1 9. The rack of claim 8 wherein the control module is housed in the rack frame.
- 1 10. The rack of claim 8 wherein the control module is further configured to maintain an  
2 inventory of the devices that are coupled to the interface column.
- 1 11. The rack of claim 8 wherein the control module is further configured to provide an  
2 operator control access to one or more of the devices coupled to the interface column.
- 1 12. The rack of claim 8 wherein the control module provides keyboard and video access to  
2 the one or more devices coupled to the interface column.
- 1 13. The rack of claim 8 wherein the control module permits devices coupled to the interface  
2 column to share a peripheral device.
- 1 14. The rack of claim 8 wherein the control module is communicatively coupled to other  
2 electrical devices in other rack frames and capable to manage those electrical devices.
- 1 15. The rack of claim 14 wherein the control module is configured to gather physical location  
2 information and configuration information of the electrical devices.
- 1 16. The rack of claim 8 wherein the control module provides centralization security access to  
2 the electrical devices.

1 17. The rack of claim 8 wherein the control module gathers and analyzes usage of the  
2 electrical devices for proper preventive maintenance and provisioning of the electrical devices.

1 18. The rack of claim 1 further comprising:  
2 a dual redundant power supply electrically coupled to the one or more electrical devices  
3 housed in the rack frame and configured to provide uninterrupted power.

1 19. A rack system comprising:  
2 a rack frame to house one or more electrical devices;  
3 one or more electrical devices mounted in the rack frame;  
4 an interface column coupled to the rack frame, the interface column including one or  
5 more interfaces for electrically coupling to one or more electrical devices housed in the rack  
6 frame; and  
7 a hybrid cable coupling an electrical device mounted in the rack frame to an interface in  
8 the interface column, the hybrid cable for carrying a plurality of signals to and from the electrical  
9 device.

1 20. The rack system of claim 19 wherein the hybrid cable carries video, keyboard and mouse  
2 signals.

1 21. The rack system of claim 19 wherein the interface column and hybrid cable reduce the  
2 number of separate cables running along the rear portion of the rack frame.

1 22. The rack system of claim 19 wherein the hybrid cable carries universal serial bus (USB)  
2 signals.

1 23. The rack system of claim 19 wherein the hybrid cable includes a single connector at a  
2 first end to connect to an interface in the interface column, and multiple connectors at a second  
3 end to connect to standard computer interfaces.

1 24. A rack management system comprising:  
2 a rack frame to house one or more electrical devices;  
3 an interface column coupled to the rack frame, the interface column including  
4 one or more interfaces to electrically couple to one or more electrical devices housed  
5 in the rack frame,  
6 an electrically conductive bus coupled to the one or more interfaces to reduce the  
7 number of separate cables running along the rear portion of the rack frame; and  
8 a control module coupled to the electrically conductive bus in the interface column to  
9 provide management access to the one or more electrical devices coupled to the interface  
10 column.

1 25. The rack management system of claim 24 wherein the control module is further  
2 configured to  
3 maintain an inventory of those devices coupled to the interface column and recognize  
4 when electrical devices have been added to the rack frame,  
5 provide keyboard and video access to the one or more devices coupled to the interface  
6 column, and  
7 permit electrical devices coupled to the interface column to share a peripheral device.

1 26. The rack management system of claim 24 wherein the control module is further  
2 configured to  
3 provide mouse, serial port, and universal serial bus access to the one or more devices  
4 coupled to the interface column.

1 27. The rack management system of claim 24 wherein the control module is further  
2 configured to  
3 provide centralized security access to the electrical devices, and  
4 collect and analyze usage of the electrical devices for proper preventive maintenance,  
5 metering, monitoring and provisioning of the electrical devices.

1 28. The rack management system of claim 24 wherein the control module is further  
2 configured to permit a user to remotely control one or more of the electrical devices coupled to  
3 the interface column.

1 29. The rack management system of claim 24 wherein the control module is further  
2 configured to remotely control one or more electrical devices coupled to an interface column of  
3 another rack frame.

1 30. The rack management system of claim 24 wherein the control module is further  
2 configured to automate management of the one or more electrical devices based on user  
3 programmable rules.

1 31. An apparatus comprising:  
2 a control module, the control module including a first interface to communicate with one  
3 or more electronic devices coupled to an interface column;  
4 a computing device communicatively coupled to the control module, the computing  
5 device configured to  
6 control one or more of the electronic devices over the first interface,  
7 maintain an inventory of those devices coupled to the interface column and  
8 recognize when electrical devices have been added,  
9 provide centralization security access to the electrical devices, and  
10 collect and analyze usage of the electrical devices for proper preventive  
11 maintenance and provisioning of the electrical devices..

1 32. The apparatus of claim 31 where the control module provides keyboard and video access  
2 to the one or more electronic devices.

1 33. The apparatus of claim 31 wherein the control module provides mouse, serial port, and  
2 universal serial bus access to the one or more electronic devices.

1 34. The apparatus of claim 31 wherein the control module permit electrical devices coupled  
2 to the interface column to share a peripheral device.

1 35. A rack management system comprising:

2 a first interface column having one or more interfaces to communicatively couple one or  
3 more servers;

4 a second interface column having one or more interfaces to communicatively couple one  
5 or more servers;

6 a control module communicatively coupled to the first interface column and the second  
7 interface column;

8 a user interface device communicatively coupled to the control module, the user interface  
9 device configured to

10 monitor one or more servers coupled to the first interface column,

11 monitor one or more servers coupled to the first interface column, and

12 maintain an inventory of the servers coupled to the first interface column and the  
13 second interface column to recognize when a new server has been added.

1 36. The rack management system of claim 35 wherein the first interface column is located in  
2 a first rack cabinet and the second interface column in located in a second rack cabinet.